



FOREIGN DIRECT INVESTMENT, OIL SECTOR AND ECONOMIC GROWTH IN NIGERIA

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Abstract

The study examined the extent to which foreign direct investment in the oil sector influence economic growth in Nigeria. Although, it has been difficult to ascertain why foreign direct investment FDI in oil sector has not been able to measure up relative to other oil rich countries of the world. Nigeria has not been able to efficiently benefit adequately in this regards, it is on this premise that the work offers a practical means of addressing the phenomenon. The study covers the period 1970 -2022; the study is descriptive and quantitative in nature using statistical tools, trends, the Structural Vector Autoregression (SVAR), among other econometric models. The findings of the study showed a relationship among gross domestic Product, Foreign direct investment, oil exports, index of openness, employment and oil price. Finding showed that the lag value of gross domestic product has a positive but a statistically insignificant effect on economic growth in Nigeria. Oil exports have a positive and statistically significant impact on economic growth in Nigeria in the short-run. The analysis implies that a 1% increase in oil exports will lead to a 0.18% increase in economic growth in the economy. The paper concluded by recommended that Pragmatic mechanisms should be put in place to properly channel domestic technology ,improve on local technology and co-engage foreign and local technology for on the job training among others.

Key words: Oil export, Economic growth, foreign direct investment, exchange rate, inflation, employment.

Introduction

Foreign direct investment (FDI) is an important factor in the globalization process and in recent years has outpaced trade (Almsafir et al, 2011); It is also a vital component of the global economic system and a significant catalyst for the transfer of capital and human resources from one nation to another (OECD, 2017). Thus, foreign direct investment is a component of the economic system that promotes economic growth and infrastructural development. Developed and developing nations have in one way or the other provided incentives to encourage foreign direct investment in their economies (Melnyk, Kubatko, & Pysarenko, 2014); and many academics and policy makers report that foreign direct investment (FDI) can have significant favorable effects on the growth of a host economy along with doestic investment In addition to the funds it provides, foreign direct investment

can be a source of useful technology and technical know-how that can improve links with local businesses, which can support economic growth.

Furthermore, it has been observed that since the early 1980s a number of nations have implemented regulations meant to promote foreign direct investment and loosen financial flow restrictions and as a result foreign direct investment rose to prominence as one of the key sources of cash flow and a driving force behind economic growth by improving the balance of payments and increasing cash flows, which add more money to the current account and may be used to fund regional projects that are expected to have a favorable impact on the host country's economic performance. In same vein foreign direct investment is seen as a way to improve the peoples welfare through stimulating economic growth, extending employment possibilities, and increasing trade (Asiedu, 2018). According to Egolum (2011) He posts that in efforts to encourage the inflow of foreign direct investments (FDI), the Federal Government has adopted a variety of policies and measures which have allowed foreign investors to be almost treated in same vein as local investors with tax breaks and incentives. The National Investment Promotion Commission Act, 1995) was established with the purpose of promoting and facilitating investment in Nigeria with a one-stop investment center that brings together and streamlines administrative processes for new firms and investments; this center is supported by cooperation from 27 governmental and parastatal entities by promoting suitable investment climate; with the intention that incentive programs will encourage the inflow of foreign private investments and the government has demonstrated awareness of macro-policy and institutional framework particularly on macro-economic policies which are considered important in influencing investment decisions; eliminated restrictions and ceilings on FDI and permitted 100 percent foreign ownership in all sectors, with the exception of those that are illegal under local and international law (Emudainohwo, 2015). Economic potential is well recognized to be the biggest economy in the West African sub region given the country's considerable resource endowment and coastal location it is clear that it posses potential for strong growth, But yet Nigeria has realized very little because the previous efforts at planning and visioning were not sustained (Onyali & Okafor, 2014).

1.1 Back Ground to the Study

Economic openness is widely acknowledged to increase economic growth in both rich and developing countries. The oil and gas industry in Nigeria draws the greatest FDI inflows, according to a sector-by-sector examination of FDI inflows. \$20.83 million and \$203.9 million dollars in foreign capital were invested in the oil and gas industry during the first quarter of 2016, and the second quarter's respectively. A total of \$171.63 million and \$227.3 million were reported in the third and fourth quarters, respectively. In the first six months 2017, foreign investment inflows into Nigeria's oil and gas sector climbed to US\$291.47 million. Compared to the 21.21% inflows saw in the first half of 2016, inflows grew by 31.76%. (NBS, 2017) Beginning in 2020, Nigeria's primary trade partner for crude oil was Europe. In the fourth quarter of 2020, crude oil shipments to Europe were worth roughly N853 billion, which is about US\$2 billion. However, in the fourth quarter of 2020, exports from Nigeria exceeded N880 billion and reached over US\$2.2 billion, making Asia the top destination for Nigerian crude oil. A total, shipments of crude oil drastically declined in the second quarter of 2020. Nigeria's export value is mostly derived from crude

oil exports. The Nigerian economy has been significantly impacted by the Covid-19 pandemic epidemic, Due to declining demand, crude oil prices fell precipitously, and the nation continuously reduced daily crude oil output. About 9% of Nigeria's GDP comes from the country's petroleum industry. However, due to the decreased in demand which was occasioned by the COVID-19 epidemic, Nigeria's oil output and exports decreased. The oil sector's share of this total real GDP in 2020 between October and December was roughly 5.9%, which is a decrease of about 3% from the prior quarter. Finally, the oil sector's share of the nation's GDP increased to 9.25% in the first quarter of 2021. The mineral fuels, petroleum, and distillate products industry contributed more than 80% of Nigeria's export value in 2019, totaling about \$45 billion (NBS, 2021). A downturn in FDI into Nigeria during the past years, coupled with a drop in oil prices on the global market, has slowed Nigeria's oil exports, which has had an adverse effect on economic growth. The government's pursuit of an expansive fiscal policy through public expenditure was simplified as a resultant effect. This decline in her FDI influx will have an impact on employment possibilities, consumption levels, investment levels, and employment growth. Given that global uncertainties decreased net FDI inflows from 1996 to 2019 and that oil exports were influenced by declining oil prices, the current epidemic on FDI is particularly concerning. Majority of the time, rising economies like Nigeria and those in the Asia-Pacific region experience severe shocks brought on by GDP uncertainty (Ho and Gan, 2021). Because of the loss in FDI coming in, host nations like Nigeria may see a drop in oil output and exports, which would cause the economy to contract. This has made it necessary to conduct a research of this kind, which look at how oil exports affect economic growth in Nigeria.

1.2 Statement of the Problem

Nigeria receives a higher proportion of FDI in the petroleum sector than in other industries, similar to other Sub-Saharan African countries. UNCTAD (2020) stated that FDI inflows to Nigeria surged by 71% from \$2 billion in 2018 to \$3.4 billion in 2019, led by resource-seeking inflows in the petroleum sector. Capital from Nigeria's petroleum sector accounted for the majority of a 17% increase in capital flows to around \$11 billion in West Africa. This demonstrates how cash flows to Nigeria's petroleum industry are distorted.

Nigeria's oil exports and FDI have a favorable correlation, according to empirical literature (see Adereni, Azeez, Elufisan and Awomailo 2019; Afolaya and Jimoh 2019; Hussain and Ahmed 2017; Makuchukwu, Salami; Fatimah, Gazi and Oke 2012). Despite an increase in oil exports fueled by FDI inflows, oil money in Nigeria has not had the desired effects, notably in the aspect of economic progress and development. There is no conclusive evidence that the increase in oil exports brought on by FDI inflows has had any direct or indirect effects on economic growth in Nigeria, unlike other oil-rich nations that have frequently exchanged their oil for fixed capital, leading to enormous capital formation and, consequently, economic growth and development. The development and expansion of Nigeria's economy are gravely threatened by this.

Although it is possible that the export of oil would have a direct impact on Nigeria's economic welfare, it is also very likely that this impact will only be indirect. With an increase in oil export profits, the government may decide to spend more or conserve more.

Increased government expenditure may be directed toward developing fixed capital or human capital, both of which support economic growth and development. Furthermore, increased government savings add to general savings, which when used can boost the economy. This study aims to conduct an empirical assessment of how foreign direct investment through oil exports affects Nigeria's economic prosperity.

1.3 Research Questions

This study seeks to solve the following puzzles

- i. What is the effect of FDI on Oil export in Nigeria?
- ii. How has FDI through oil Export impacted Economic growth in Nigeria?

1.3 Objectives of the Study

The objective of this study is to examine the relationship between FDI, Oil export, economic growth in Nigeria. The specific objectives are to:

- i. Examine how FDI impact on Oil export in Nigeria;
- ii. Ascertain the effect of FDI on economic growth through Oil export in Nigeria

1.5 Research Hypotheses

This study is guided by the following hypotheses:

H₀₁: there is no significant relationship between FDI and Oil export in Nigeria;

H₀₂: FDI through oil export has no significant impact on economic growth in Nigeria.

1.6 Significance of the Study

Oil export has unsurprisingly been extremely important to Nigeria's political economy. The transmission channels oil sales towards achieving economic growth in Nigeria have not been adequately subjected to any empirical details, despite the fact that these contributions to economic growth in Nigeria have been enormous and have each been the subject of empirical investigation separately. The relationship and nature of transmission between FDI, through oil export to economic growth in Nigeria have not been adequately documented in empirical literature.

Additionally, this research will serve as a resource for decision-makers and aspiring researchers on related subjects, which will incite profound and innovative thoughts that are practically applicable to help improve the management of oil export for the achievement of capital formation for the purpose of achieving real economic prosperity and development in Nigeria and other resource-rich countries.

2.0 Review of Related Literature

Despite several empirical works on oil export, there is little conceptual literature on oil exports. The entire amount of oil exported, including both crude oil and refined oil products, is measured in barrels per day (bb/day). According to Eche E. (2024) and Akighir and Kpoghul (2020), oil exports include semi-finished and unfinished petroleum products, liquid fuel, lubricating oils, solid and semi-solid goods made from distillate and cracking of crude petroleum, and solid and semi-solid products made from liquid fuel. Oil and gas extraction is a key source of export income and, to a lesser extent, source of employment in many developing economies. However, the most significant benefit that a nation may get from its growth is arguably the fiscal role that the oil and gas industry plays in

generating tax revenue and other government funds. To ensure that the state, as the owner of the resource, receives a fair share of the economic rent generated by oil and gas development, export strategies and the tax system must be properly established (Sunley, Baunsgaard and Simard, 2002).

2.1. Economic Growth

The expansion of a nation's capacity to produce goods and services from one period to the next is referred to as economic growth. It also refers to as the gradual rise in the quantity of goods and services an economy generates. Ogunleye (2014). The World Bank (2019) sees economic growth as an increase in the production of goods and services over a specific time period. For precision, the measurement of economic growth must take the effects of inflation into account. Business profits increase as a result of economic growth. The effect is a rise in stock prices. Businesses can invest and increase employee numbers as a result. As more employment opportunities are created, income rises. The consumers have sufficient funds to purchase extra goods and services. Purchases stimulate economic growth at a higher rate. This is why good economic growth is the goal of all nations. As a result, one of the important economic indicators is economic growth.

The most reliable growth metric is the Real Gross Domestic Product (RGDP). It eliminates the detrimental effects of inflation. The World Bank uses Gross National Income (GNI) as a growth indicator rather than GDP. It includes cash sent home by Americans working overseas. It is a key source of revenue for many developing countries like Nigeria. While growth rates are important, the World Bank (2019) Group emphasizes that growth patterns that prioritize increasing opportunities for the disadvantaged and excluded, especially women and youth, can result in more strong and sustainable growth.

Comparisons of GDP by nation will understate the full magnitude of these nations' economies. The GDP does not include unpaid services. This excludes daycare, unpaid volunteer labor, and illegal black market activities. Environmental expenditures are not included in. For instance, plastic is cheap since disposal fees are not included in. However, the impact of these costs on social wellbeing is not taken into consideration by GDP. A nation's level of living can be improved when environmental costs are considered. Only the values of a society are measured. The gross domestic product is the most reliable measure of economic growth (GDP). It takes into account the whole nation's economic output, which includes all goods and services produced for export by local businesses whether they are sold domestically or overseas. A measure of output is the GDP. The parts that are created to make a product are not included, though. Because they are made domestically, exports are taken into account. Imports are taken into consideration while adjusting economic growth.

Since 2015, the pace of economic growth has been moderate. After averaging 1.9% in 2018, growth was constant at 2% in the first six months of 2019. Internal demand is still hedged as a result of low private spending and high inflationary episodes (11% in the first six months of 2019). From the perspective of output, the services sector, particularly the telecoms, was the primary engine of development in 2019. The North-East insurgency and ongoing farmer-herdsmen disputes are to blame for the continued underperformance of the agriculture sector. Industry performance is inconsistent due to a worse power sector performance in 2019, manufacturing production is slowing down, while GDP growth is

steady. It was predicted that output of food and beverages would rise in response to import restrictions. The construction sector, on the other hand, is still performing well as a result of continuing megaprojects, increased public spending in the first half of the year, and import restrictions. The growth rate is too slow to eradicate poverty among the poorest 50 percent of the population. The agriculture sector's failure harms the chances of poor rural inhabitants, while excessive food inflation has a detrimental effect on the poor in urban regions. Oil production is slowing in 2019 as a result of a poorer power sector performance, GDP growth is constant. In reaction to import limitations, an increase in food and beverage production was anticipated.

On the other hand, the construction industry is still doing well thanks to ongoing megaprojects, increased public expenditure in the first half of the year, and import restrictions. The growth rate is too slow to eradicate poverty among the poorest 50 percent of the population. The agriculture sector's failure harms the chances of poor rural inhabitants, while excessive food inflation has a detrimental effect on the poor in urban regions. Despite growth in some industries, employment growth is still slow and insufficient to keep up with the labor force's rapid expansion, leading to a high unemployment rate (23% in 2018) and 20% of the work force being underemployed. The high rate of poverty in the country's North-East area was also a result of the instability in the Northern region and the resulting population relocation.

Nigeria's medium-term growth is forecast to stay constant at roughly 2% in the absence of major fundamental policy adjustments. As a result, it is anticipated that the economy would expand more slowly than the population and that living standards will decline. Growth is also constrained by a weak macroeconomic environment, high persistent inflation, several exchange rate windows, restrictions on foreign exchange, distorting actions of the central bank, and a lack of revenue-driven fiscal consolidation outcomes. The increase of private sector credit is constrained by increasing public debt as well as more complex central bank policy measures. Nigeria's economy is vulnerable to external risks because fiscal buffers have been exhausted and external balances are unstable due to hot money flows. The opportunity exists for the incoming administration to quicken the pace of structural changes in order to create an institutional and regulatory framework capable of controlling the volatility of the oil industry and fostering long-term expansion of the non-oil economy. The abolition of trade and forex restrictions, the elimination of subsidies, enhanced domestic tax mobilization, and more openness and predictability of monetary policy are all bold measures that might have a substantial influence on the economy's trajectory. While raising spending on much needed public services, such measures would help enhance the standard of life for low-income populations. After much consideration, the signing of the Africa Continental Trade Agreement may also provide the economy a boost in the medium run. Economic indicators from the World Bank

3.0 Data Presentation and Analysis of Results

3.1 Method of the Study.

Data was analyzed using descriptive statistics and econometric analytical tools, the unit root test, ADF, KPSS, the SVAR and Variance decomposition tests were carried out. The IRF was also used to track the responsiveness of the regressands in the SVAR to the shocks

in the other variables. The variance decomposition explained the extent of movement in the dependent variables explained by their own shocks vis-avis shocks from other factors.

3.2 Model specification and Discussion

In tracing the indirect effect of foreign direct investment on the economy, the employment channel will be used as specified. Foreign direct investment inflows create employment avenues in an economy and thus affect economic growth positively. Thus, the transmission which is the pass-through effect of foreign direct investment to economic growth via employment is given as follows:

$$FDI \longrightarrow EMP \longrightarrow GDP \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad -$$

1

Where FDI is foreign direct investment inflows, EMP is employment, and GDP is economic growth (proxy by gross domestic product).

Transposing the transmission yields,

$$GDP_t = f(GDP_{t-1}, EMP_{t-1}, FDI_{t-1}, EMP_t, FDI_t) \quad - \quad - \quad - \quad - \quad (2)$$

$$EMP_t = f(GDP_{t-1}, EMP_{t-1}, FDI_{t-1}, GDP_t, FDI_t) \quad - \quad - \quad - \quad - \quad (3)$$

$$FDI_t = f(GDP_{t-1}, EMP_{t-1}, FDI_{t-1}, GDP_t, EMP_t) \quad - \quad - \quad - \quad - \quad (4)$$

Therefore, the exposition of the normalized SVAR (4.7) system of equation yields the following,

$$GDP_t = \alpha_{11}^1 GDP_{t-1} + \alpha_{12}^1 EMP_{t-1} + \alpha_{13}^1 FDI_{t-1} + \alpha_{12}^0 EMP_t + \alpha_{13}^0 FDI_t + \varepsilon_{1t} \quad - \quad - \quad (5)$$

$$EMP_t = \alpha_{21}^1 GDP_{t-1} + \alpha_{22}^1 EMP_{t-1} + \alpha_{23}^1 FDI_{t-1} + \alpha_{21}^0 EMP_t + \alpha_{23}^0 FDI_t + \varepsilon_{2t} \quad - \quad - \quad (6)$$

$$FDI_t = \alpha_{31}^1 GDP_{t-1} + \alpha_{32}^1 EMP_{t-1} + \alpha_{33}^1 FDI_{t-1} + \alpha_{31}^0 GDP_t + \alpha_{32}^0 EMP_t + \varepsilon_{3t} \quad - \quad - \quad (7)$$

Collecting the contemporaneous effects to the Left Hand Side (LHS) turns,

$$GDP_t - \alpha_{12}^0 EMP_t - \alpha_{13}^0 FDI_t = \alpha_{11}^1 GDP_{t-1} + \alpha_{12}^1 EMP_{t-1} + \alpha_{13}^1 FDI_{t-1} + \varepsilon_{1t} \quad - \quad (8)$$

$$-\alpha_{21}^0 GDP_t + EMP_t - \alpha_{23}^0 FDI_t = \alpha_{21}^1 GDP_{t-1} + \alpha_{22}^1 EMP_{t-1} + \alpha_{23}^1 FDI_{t-1} + \varepsilon_{2t} \quad - \quad (9)$$

$$-\alpha_{31}^0 GDP_t - \alpha_{32}^0 EMP_t + FDI_t = \alpha_{31}^1 GDP_{t-1} + \alpha_{32}^1 EMP_{t-1} + \alpha_{33}^1 FDI_{t-1} + \varepsilon_{3t} \quad - \quad (10)$$

In order to estimate the appropriate model, the minimum Schwarz criterion was estimated to select the optimal model as shown in Figure

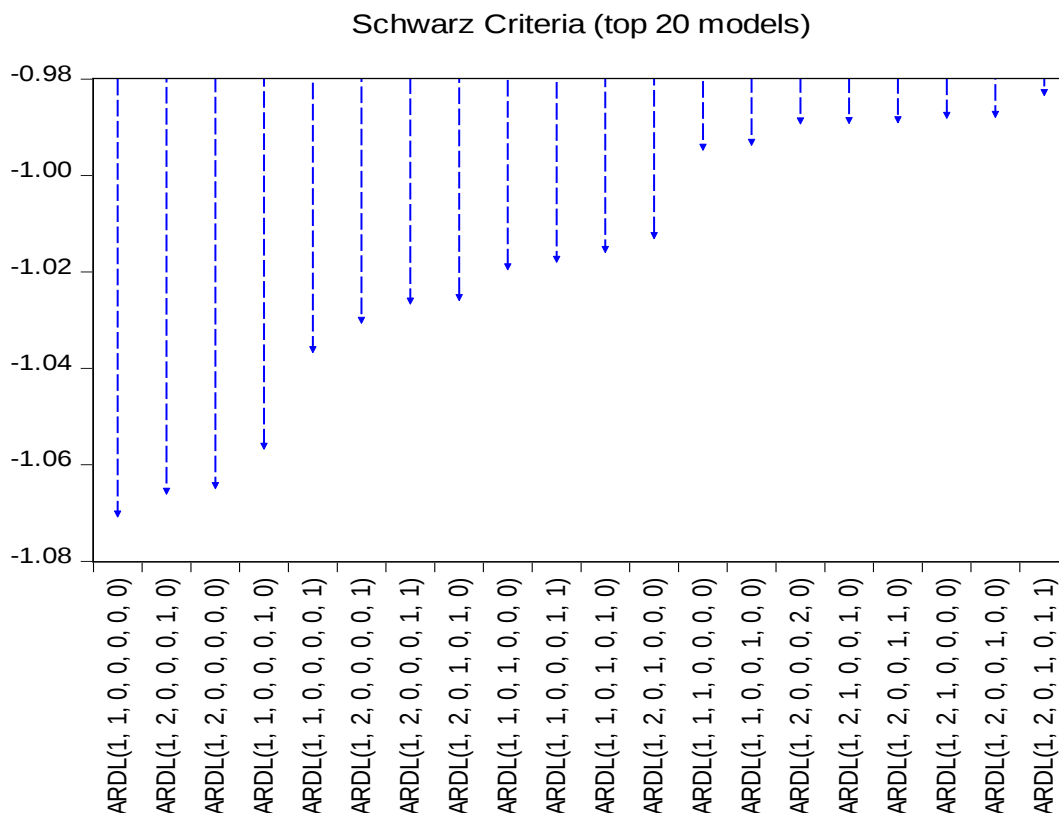


Figure 1.0: Schwarz Criteria

Source: Author's Estimation Using E-views 10

Figure 1.0 indicates that ARDL (1,1,0,0,0,0,0) is the optimal ARDL model to be estimated among the top 20 ARDL models.

In order to determine the long-run relationship among the variables of interest, Autoregressive Distributed Lag (ARDL) bounds test was estimated and is presented in Table 1.0

Table 1.0: Autoregressive Distributed Lag Bounds Test

Test Statistic	Value	Sign.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	4.602159	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: Author's Estimation Using E-views 10

Table 1.0 indicates that the F-statistics value of 4.60 is higher than the upper bound value of 3.28 at a 5% level of significance. This implies that there is a linear long-run relationship

among the variables in the model. Thus the short-run and the long-run estimates were estimated as shown in Tables 1.2 and 1.3.

Table 1.2: Short-Run Estimate of the ARDL (1,1,0,0,0,0) Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.703868	1.489319	0.472611	0.6389
GDP(-1)*	0.245443	0.098059	2.503004	0.0162
FDI(-1)	0.133153	0.031899	4.174206	0.0001
INFL**	0.000261	0.001654	0.157763	0.8754
EXR**	-0.002209	0.000454	-4.865638	0.0000
EMP**	0.009120	0.027763	0.328513	0.7441
OPN**	-0.000901	0.002135	-0.422076	0.6751
INTR**	-0.007390	0.004772	-1.548557	0.1288
D(FDI)	0.172684	0.046452	3.717430	0.0006
ECM(-1)	-0.245443	0.063577	-3.860545	0.0004
Adjusted R-squared	0.821392			
F-statistic	30.31777			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	1.068381			

Source: Author's Estimation Using E-views 10.

Table 1.2 indicates the short-run relationship among gross domestic Product, foreign direct investment, inflation, exchange rate, employment, index of openness, and interest rate. From the table, the lag value of gross domestic product has a positive and statistically significant effect on economic growth in Nigeria. The lag and the current values of foreign direct investment indicate positive and statistically significant impact on economic growth in Nigeria in the short-run. This suggests that a 1% increase in foreign direct investment will lead to a 0.13% and 0.17% increase in economic growth respectively in the economy. Inflation has a positive but statistically insignificant impact on economic growth in Nigeria in the short-run. Exchange rate has a negative and statistically significant impact on economic growth in the short-run in Nigeria. This implies that a 1% increase in exchange rate will lead to a reduction by 0.002% in economic growth in Nigeria in the short-run. Employment indicates a positive but statistically insignificant impact on economic growth in Nigeria in the short-run. The index of openness has a negative and statistically insignificant impact on economic growth in the short-run in Nigeria. Similarly, interest rate has a negative and statistically insignificant effect on economic growth in Nigeria in the short-run.

The speed of adjustment [ECM(-1)] which explains the speed of adjustment of variables to equilibrium in the long-run is negative (-0.245443) and statistically significant. Meaning that disequilibrium among gross domestic product, foreign direct investment,

inflation, exchange rate, employment, index of openness, and interest rate will readjust to equilibrium in the long-run.

The Adjusted R-squared value of 0.82% suggests that, foreign direct investment, inflation, exchange rate, employment, index of openness, and interest rate have explained short-run variation in economic growth by 82% in Nigeria. Also, the F-statistic value of 30.31777 is statistically significant, implying that, the explanatory variables have a strong joint effect on economic growth in Nigeria. Finally, the Durbin-Watson statistic value of 1.068381 shows the absence of autocorrelation in the model.

Furthermore, the long-run estimates for the model were estimated and presented in Table 5.17.

Table 1.3: Long-Run Estimates of the ARDL (1,0,0,0,0,0) Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.135072	0.053265	2.535849	0.0231
INFL	0.001063	0.006717	0.158274	0.8750
EXR	-0.080850	0.032046	-2.522935	0.0298
EMP	0.037159	0.109038	0.340788	0.7349
OPN	-0.003672	0.009418	-0.389837	0.6986
INTR	-0.030110	0.014641	-2.056488	0.0458
C	2.867744	6.191154	0.463200	0.6456

Source: Author's Estimation Using E-views 10.

Table 1.3 shows the long-run relationship among the variables in the model. Foreign direct investment has a positive and statistical significant impact on economic growth Nigeria. This implies that a 1% increase in foreign direct investment inflow in the long-run will lead to a 0.14% increase in economic growth in the country. Inflation has a positive but a statistically insignificant impact on economic growth in Nigeria in the long-run. Exchange rate has a negative but statistically significant impact on economic growth in the economy. This suggests that a 1% increase in exchange rate in Nigeria will lead to a reduction in economic growth by 0.08% in the long-run. Employment has a positive but statistically insignificant impact on economic growth in Nigeria in the long-run. The index of openness has a negative and statistically insignificant impact on economic growth in the long-run in Nigeria. Interest rate has a negative but statistically significant impact on economic growth in Nigeria. This suggests that a 1% reduction in interest rate will lead to increase in economic growth in Nigeria by 0.03% in the long-run.

1.4 Diagnostic Tests

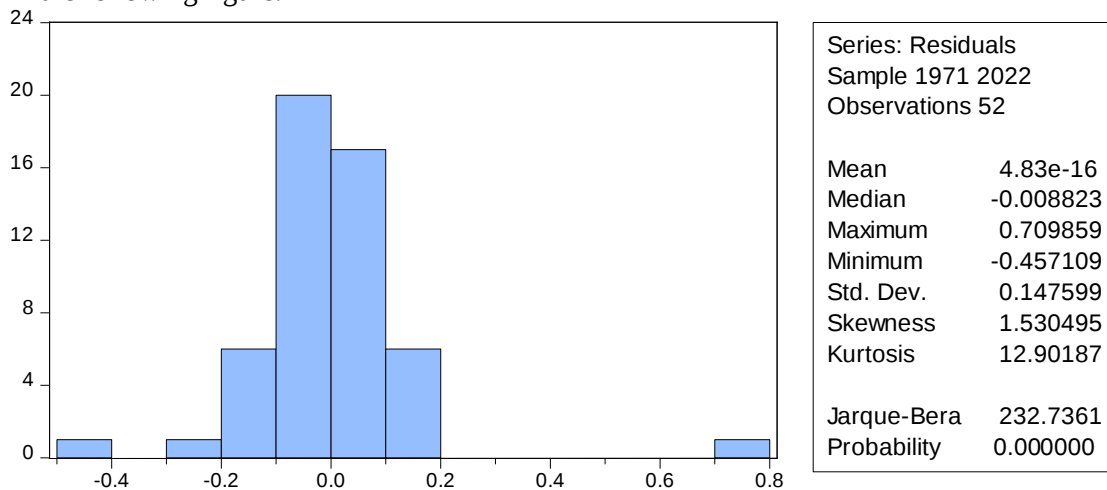
In order to ensure the validity of the results, diagnostic tests were estimated and presented in the following tables.

Table 1.4: Results of Ramsey Reset Test

	Value	df	Probability
t-statistic	0.742171	42	0.4621
F-statistic	0.550818	(1, 42)	0.4621

Source: Author's Estimation Using E-views 10

The t-statistic and F-statistic of the Ramsey Reset tests are both statistically insignificant. This means that, the model is correctly specified in terms of its functional form and inclusion of relevant explanatory variables. Furthermore, the normality test of the residuals was estimated and the results are presented in the following figure.

**Figure 1.1: Normality Test**

Source: Author's Estimation Using E-Views 10

The normality histogram and the Jarque-Bera statistics have both shown that, the residuals of the model are not normally distributed. However, the violation of the assumption of normality in a distributed lag model does not have serious consequences on the validity of the estimates.

Also, the serial correlation test was estimated using the Breusch-Godfrey Serial Correlation LM Test and the result is presented in the following table.

Table 1.5: Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.811038	Prob. F(2,41)	0.2303
Obs*R-squared	1.951605	Prob. Chi-Square(2)	0.3170

Source: Author's Estimation Using E-views 10

The result of both F-statistics and Chi-Square (2) are statistically insignificant indicating the absence of serial correlation among the residuals of the model.

Also, the Heteroskedasticity test was estimated using the Breusch-Pagan-Godfrey and the results are presented in Table 1.60.

Table 1.60: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.647437	Prob. F(8,43)	0.1397
Obs*R-squared	12.19900	Prob. Chi-Square(8)	0.1425

Source: Author's Estimation Using E-views 10

Both the F-statistics and Chi-Square (2) are statistically insignificant indicating that the residuals are homoscedastic.

Finally, stability test were conducted and the results are presented in the following figures.

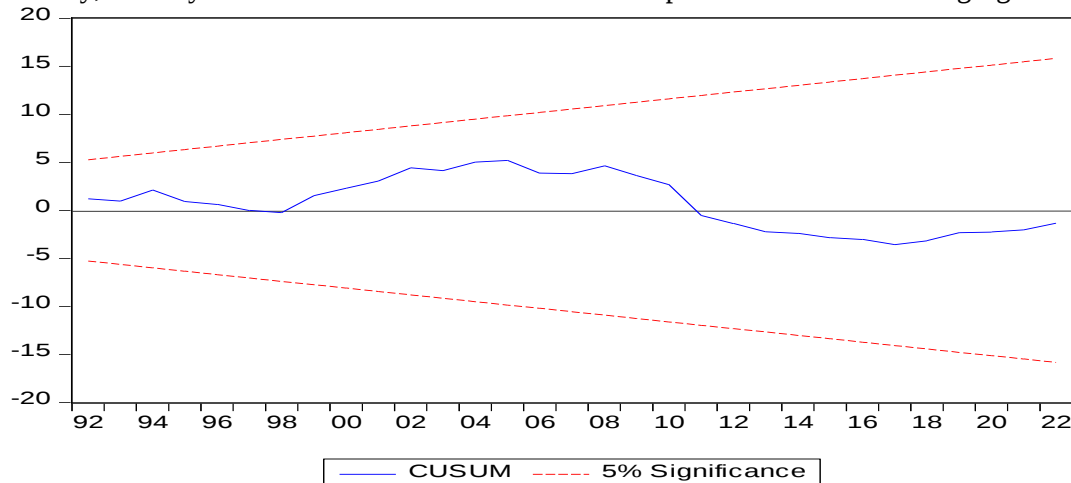


Figure: 1.3: The CUSUM Test for Stability

Source: Author's Estimation Using E-Views 10

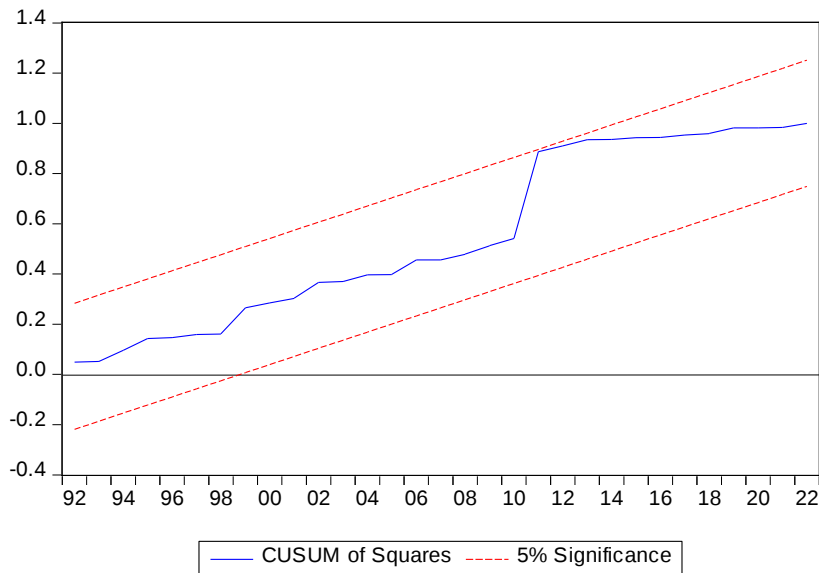


Figure 1.4: The CUSUM of Squares Test for Stability

Source: Author's Estimation Using E-Views 10

Both the CUSUM and CUSUM of Square tests have shown the presence of stable estimates, since all the graphs are within the 5% significance critical bounds.

4.0 Discussion of Findings

The study found long-run relationship among oil exports, foreign direct investment, and index of openness, exchange rate, oil prices, OPEC quota, and foreign demand. Specifically, the study found that FDI oil and gas had positive and statistically significant impact on oil export both in the short- and long-run. This finding is in line with Eche, E. (2024) who found that FDI had positive impact on oil exports. This means that increase in the inflow of foreign investment in the oil and gas will exert positive impact on the volume of oil exports in the country. This could be through huge capital investment, innovations and efficient production techniques in the oil and gas sector.

Also, the study found that oil export had positive and statistically significant impact on economic growth in both the short and long-run in Nigeria. This finding is in tandem with Ugwu et al. (2019); Sultan and Haque (2018) who found positive impact of oil exports on economic growth. This suggests that the export of oil provides revenue for the funding of the economy in diverse ways such as critical infrastructures, welfare services and direct investments in the economy which has a multifaceted impact on the aggregate economy.

Furthermore, the study found that foreign direct investment in the oil and gas sector had positive and statistically significant impact on economic growth in both the short and long-run in Nigeria. This finding collaborate Idris and Usman (2022); Udi et al. (2021); Obinne et al. (2020); Alabi (2019); Okey and Amba (2018); and Akinyemi et al. (2018) who found that foreign direct investment positively impact on economic growth. This suggests that the inflow of foreign direct investment in the oil and gas sector affect oil production, exports and revenue which has multiplier effect on the Nigeria economy.

5.0 Summary

The study investigated the nexus among foreign direct investment, oil export and economic growth in Nigeria from 1970 to 2021. Specifically, the study examined the pass-through effects of foreign direct investment to economic growth via oil exports. The study utilized the Autoregressive Distributive Lag (ARDL) model and the Structural Vector Autoregressive (SVAR) model in the investigation.

Findings of the study revealed that, first, foreign direct investment in oil and gas industry has positive and statistically significant relationship with oil exports both in the short and long-run in Nigeria. Second, the study found that oil exports have positive and statistically significant impact on economic growth in Nigeria. Third, findings indicated that, there is positive and statistically significant relationship between foreign direct investment in oil and gas sector and economic growth of the Nigeria both in the short and long-run.

6.1 Conclusion

On the basis of the findings of this study, it is concluded that, directly, foreign direct investment in oil and gas exerts strong positive impact on oil exports. Also, oil exports impacts positively on economic growth in Nigeria. Again, foreign direct investment in oil and gas exerts strong positive impact on economic growth in Nigeria. Indirectly, foreign direct investment in oil and gas through employment, foreign reserves and exchange rate channels transmits weak spillover effects to economic growth; but through oil exports, there is a strong pass-through effect to economic growth in Nigeria.

6.2 Recommendations

On the basis of the findings and conclusion the study recommends the followings:

1. The Government through the Ministry of Industry, trade and investment in collaboration with the ministry of petroleum and gas should make concerted efforts in attracting and retaining foreign direct investment in the oil and gas sector. This can be done by improving on the investment climate in the country through control of rising insecurity and economic policies that can ensure economic stability..
2. Pragmatic mechanisms should be put in place by the Ministry of Defense and Interior to forestall oil theft and bunkering. Also, efforts should be made to forestall pipeline leakages. These efforts will go a long way in increasing the volume of oil exports that will guarantee sustained economic growth.
3. To improve on the positive potentiality of employment transmission effect as a spillover of foreign direct investment in the oil and gas industry, there should be adaptation of indigenous technology and indigenous manpower engagement to acquire skills from the expatriate's on the job.
4. To improve on the positive potentiality of the foreign reserves channel as a spillover of foreign direct investment in the oil and gas industry to the economy, the Central Bank of Nigeria and the Ministry of Finance should develop effective mechanisms that will track the receipts of foreign exchange from multinational's and ensure the remittance of same to the Federal government.
5. To ensure exchange rate reduction potentiality as a spillover of foreign direct investment in the oil and gas industry to the economy, the Central Bank of Nigeria

should potentially manage foreign exchange supply from foreign direct investment by prudent utilization in terms of allocation to critical sectors of the economy that can in turn attract further inflows of foreign direct investment in to the economy.

6.3 Contribution to Knowledge

This study has contributed to knowledge by its novelty in literature. First, it considered the direct impact of foreign direct investment on oil exports and oil exports on economic growth and foreign direct investment on economic growth within a single framework. Second, it unearths the indirect effects of foreign direct investment on economic growth in two folds. First, it unraveled three transmissions channels: namely the employment, foreign reserves and exchange rate channels as spillover effects of foreign direct investment on economic growth in Nigeria. Secondly, it examined the pass-through effect of foreign direct investment in oil and gas industry to economic growth via oil exports in Nigeria.

6.4 Limitations of the Study

The major limitation of this study was the inability to get available data that will allow for disaggregation of inflows of foreign direct investment separately in oil and gas. However, the challenge was circumvented by using aggregate data on foreign direct investment in to the oil and gas sector that guarantee the internal and external validity of the results.

6.5 Suggestion for further Studies

Further studies should explore other spillover channels of foreign direct investment in the oil and gas sector such as technological diffusion and human capacity development. Also, further studies may consider the possibility of disaggregating foreign direct investment in the oil and gas sector.

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